

WHAT IS CLAIMED IS:

1. An isolated polynucleotide from coryneform bacteria,
containing a polynucleotide sequence, selected from
the group consisting of
- 5 a) polynucleotide which is at least 70 % identical
to a polynucleotide coding for a polypeptide
which contains the amino acid sequence of SEQ ID
no. 2,
- 10 b) polynucleotide which codes for a polypeptide
containing an amino acid sequence which is at
least 70 % identical to the amino acid sequence
of SEQ ID no.2,
- c) polynucleotide which is complementary to the
polynucleotides of a) or b), and
- 15 d) polynucleotide containing at least 15 successive
nucleotides of the polynucleotide sequence of a),
b) or c).
2. A polynucleotide as claimed in claim 1, wherein the
polynucleotide is a DNA, preferably recombinant, which
20 can be replicated in coryneform bacteria.
3. A polynucleotide as claimed in claim 1, wherein the
polynucleotide is an RNA.
4. A replicable DNA as claimed in claim 2, containing
- i) the nucleotide sequence shown in SEQ ID no. 1, or
- 25 ii) at least one sequence which corresponds to the
sequence (i) within the degeneracy region of the
genetic code, or

- iii) at least one sequence which hybridises with the sequence complementary to sequence (i) or (ii), and optionally
- iv) functionally neutral sense mutations in (i).
- 5 6. A polynucleotide sequence as claimed in claim 2, which codes for a polypeptide containing the amino acid sequence shown in SEQ ID no. 2.
7. A vector containing a polynucleotide sequence as claimed in claim 1.
- 10 8. A coryneform bacterium containing a vector as claimed in claim 6.
9. A process for the fermentative preparation of L-amino acids, wherein the following steps are carried out:
- 15 a) Fermentation of coryneform bacteria producing the L-amino acid in which at least the gene coding for component H of the phosphotransferase system is enhanced, particularly overexpressed,
- b) Enrichment of the L-amino acid in the medium or in the cells of the bacteria and
- 20 c) Isolation of the L-amino acid.
10. A process as claimed in claim 9, wherein bacteria are used in which, in addition, further genes of the biosynthesis pathway of the desired L-amino acid are enhanced.
- 25 11. A process as claimed in claim 9, wherein bacteria are used in which the metabolic pathways which reduce the formation of the L-amino acid are at least partially excluded.

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12. A process as claimed in claim 9, wherein a strain transformed with a plasmid vector is used and the plasmid vector carries the nucleotide sequence of the gene coding for component H of the phosphotransferase system.
13. A process as claimed in one or more of claims 9 to 12, wherein coryneform bacteria which produce L-lysine are used.
14. A process as claimed in claim 10, wherein one or more of the genes selected from the group consisting of the dapA gene coding for dihydrodipicolinate synthase, the pyc coding for pyruvate carboxylase, the tpi gene coding for triosephosphate isomerase, the gap gene coding for glyceraldehyde-3-phosphate dehydrogenase, the ptsM gene coding for component M of the phosphoenolpyruvate-sugar-phosphotransferase system (ptsM) the pgk gene coding for 3-phosphoglycerate kinase, and the lysE gene coding for lysine export, are simultaneously enhanced, particularly overexpressed or amplified.
15. A process as claimed in claim 11, wherein, for the production of L-lysine, bacteria are fermented in which one or more of the genes selected from the group consisting of the pck gene coding for phosphoenolpyruvate carboxylase,

the pgi gene coding for glucose-6-phosphate isomerase,
the poxB gene coding for pyruvate oxidase
are simultaneously attenuated.

- 5 16. The process as claimed in one of claims 9-12 or 14-15,
wherein microorganisms of the Corynebacterium
glutamicum genus are used.
- 10 17. The use of polynucleotide sequences as claimed in
claim 1 as primers for the preparation of the DNA of
genes which code for the ptsH gene product, by the
polymerase chain reaction.
18. The use of polynucleotide sequences as claimed in
claim 1 as hybridisation probes.

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